5556

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. Patton *Director*

State: CALIFORNIA

DESCRIPTIVE REPORT

~~Topographic~~
Hydrographic } *Sheet No.* 5556 SC12

LOCALITY

CALIFORNIA

SANTA CATALINA ISLAND

ISTHMUS COVE & CATALINA HARBOR

19 34

CHIEF OF PARTY

Robert W. Knox

U. S. GOVERNMENT PRINTING OFFICE: 1930

5556

Form 537
Ed. Sept., 1929

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5556

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. SC12

REGISTER NO. 5556

State CALIFORNIA

General locality Santa Catalina Island

Locality Isthmus Cove and Catalina Harbor

Scale 1:10,000 Date of survey Jan 23 - Jul 21, 1934

Vessel chartered launch Romance

Chief of Party Robert W. Knox

Surveyed by R.W.K

Protracted by C. L. Rasmusson

Soundings penciled by R.W.K

Soundings in ~~fathoms--feet~~ fathoms

Plane of reference mean lower low water

Subdivision of wire dragged areas by

Inked by P Scherr

Verified by P.S.

Instructions dated September 13, 1933, 19

Remarks:

U. S. GOVERNMENT PRINTING OFFICE: 1929

applied to C&GS 5128 - Aug. 1935 - [illegible]

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET

NO. SC12 H-5556

Scale 1:10,000

SOUTHERN CALIFORNIA — SANTA CATALINA ISLAND

Instructions dated Sept. 13, 1933 — Surveyed by R. W. Knox

AREA, LIMITS, ETC: The hydrography of sheet SC12 covers the anchorages of Isthmus Cove and Catalina Harbor and their approaches, or approximately the same area as that contained on chart no. 5128. Junction is made on all sides with the hydrography of sheet SC23, recently submitted. H-5555 (1934)

SURVEY METHODS: Standard survey methods were used. Leads weighing 8 pounds were used in sounding from the whaleboat, 12 pounds in the hand lead sounding from the launch and 36 pounds with the gasoline engine driven sounding machine.

The inshore lines of soundings were run with a whaleboat, fitted with an outboard motor. On the inshore line, in many cases, the soundings plotted within a few meters of the beach line. This line was run, not so much with the idea of developing the depth curves so close to shore, but more as a final search for sunken rocks. Breakers and sunken rocks lying close to the rock line are dangers to navigation to the amateur yachtsmen who frequent these waters.

DISCREPANCIES: The following discrepancies were noted during the progress of the field work and/or during the smooth plotting.

a) Between 581 and 591 a 2.7 fathom sounding, if plotted on line would fall in a depth of approximately 10 fathoms. It is thought the launch swung toward White Island in coming astern on the previous sounding and due to the short interval (15 seconds) did not have time to regain the line before stopping for the sounding in question. On the smooth sheet the line was so bent and the sounding placed toward White Island.

b) The sounding on position 160q is thought to be a 49 instead of a 59 as recorded, and it is recommended it be so changed. ✓ changed

c) Between positions 44f and 45f the sounding of 39 fathoms is apparently about 5 fathoms too shoal. It is possible the acutal interval was longer than the recorded and that the sounding should be plotted ahead a distance of 30 or so meters. The sounding of 44 fathoms on position 31r checks the depth curves. See wiper report.

d) Some difficulty was experienced in making the soundingd of the launch and whaleboat agree in the close vicinity of White Rock. Most of these small discrepancies could be accounted for by irregular intervals of the launch due to affect to wind and tide.

Discrepancies, continued.

e) Considerable trouble was experienced in obtaining exact crossings on the inshore lines in several of the small bights, due, no doubt, to broken bottom, currents around points and weak fixes generally inherent to such places. All the ordinary precautions were taken while working in such area, such as having the observers close together, the angles taken simultaneous and the leadsman as near the observers as possible. In order to avoid confusion, several of the inshore whale boat lines were not plotted. The inshore positions of the regular system of whale boat lines were accepted, generally, where discrepancies arose, rather than the soundings taken closely parallel to the beach.

f) The soundings on positions 131r to 133r were not plotted as they do not agree with subsequent work. It is recommended they be rejected.

g) Position 129r is obviously too far offshore, as soundings do not check subsequent whaleboat work. The position could be plotted in its approximate correct position by changing the right angle +20°. It is recommended that the whaleboat work be plotted as recorded and the launch work made to agree, as considerable trouble was experienced with the launch in this area on account of reasons before stated. Considerable additional work was accomplished in an effort to check the sounding on position 129r. (see reverse of this sheet for additional notes)

10¾ fathoms on Fox 157 t plotted here.

DANGERS:

a) Harbor Reef, broad off Fisherman Cove, in lat. 33° 26.9', long. 118° 29.3', extends about 250 m in a northwest direction-southeast direction. The southeast end is marked by a rock that bares ½ foot at MLLW. A few strands of kelp grow over this reef.

? same as this report

b) A rock, not marked by kelp, baring 2 feet at MLLW lies in lat. 33° 27' 232m, long. 118° 30 110m. It is reported that several yachts have struck this rock. This danger is not shown upon the earlier surveys, nor upon chart 5128.

c) A group of rocks immediately east of Lion Head also do not appear upon earlier surveys. The outermost rock bares 2 feet at MLLW.

(Ship Rock

d) A group of rocks extend about 110 m S ½ E of Bird Rock. The outer three rocks are more or less of a continuous reef. Deep water extends close aboard the end of the reef. This danger is shown merely as a shoal on the earlier surveys.

e) Eagle Bank, or Western Sunken Reef as Davidson calls it, is in lat. 33° 27.6', long 118° 30.5'. The least depth obtained was 1/2 fathom, although the earlier survey shows 2 feet. No signs of growing kelp were noticed during the course of the survey. ~~Indicated as rk awash at extreme low tides~~

f) A sunken rock lies north and east of Howland Landing, in lat. 33° 27' 1615m, long. 118° 31' 395m. changed to rk awash RHS.

Discrepancies, continued.

h) The first sounding between 68u and 69u is a $5\frac{1}{2}$ among 10 fathom soundings. It is thought by the writer that this sounding is not properly spaced, due no doubt, to the fact that the launch had not settled down to sounding speed at the time of sounding. It is therefore recommended that this sounding be not charted. It might be in place now to state that in sounding with great detail with a launch the size of the Romance, it is often necessary to make short turns, requiring a considerable "kick" of the engine to assist the maneuver with consequently too great a speed immediately after the turn. Such a condition can be guarded against, but not always eliminated.

Dangers, continued.

g) Pin Rock, in Catalina Harbor, is well known. ✓

h) The west coast of the Island, below Catalina Harbor, is bordered by a few breakers, generally within the kelp line. The more important are:

1. A group of rocks near the entrance to Little Harbor ✓

2. A group of three rocks off ✓ Dun. ✓

3. A single breaker in the larger bight forming the south ✓ portion of Little Harbor.

CHANNELS: There are no channels in the area covered by this sheet.

ANCHORAGES: Several anchorages were developed on this sheet:

a) Isthmus Cove affords an excellent anchorage for small vessels against the prevailing wind and sea, and is safe in the occasional southeast gale the Island experiences. It is extremely uncomfortable in heavy northwest weather, as the seas make around the point. It is untenantable in a "Santana", or northeast blow.

b) Fisherman Cove is used but little except by small craft as a refuge from the above mentioned Santanas. From all reports, excellent protection is secured by the first few crafts to arrive.

c) The outer anchorage in Catalina Harbor affords excellent protection against the prevailing west and southwest weather, but the area is restricted. It is used extensively by commercial fishermen. The Steamer Pioneer made use of this anchorage several times during the course of her work in the vicinity.

Several men-o'-war were observed to anchor in the area south and east of Catalina Harbor. This is one reason why the chief of party developed the entire area by a system of 100 meter lines.

d) Little Harbor is a fair weather anchorage used but very little by small craft.

COMPARISION WITH PREVIOUS SURVEYS: A comparision of sheet SC12 with hydrographic sheet No. 1210, survey of 1873, shows many discrepancies, several of which cannot be explained by the writer with any degree of satisfaction. As is usual, the offshore soundings check closely, and the 10 and 5 fathom curves compare as favorably as can be expected considering the greater density of soundings on the newer sheet. However, several important shoals and rocks, generally undeveloped, appear upon the 1873 sheet of which this hydrographic party could not verify.

a) Omissions on the earlier sheet have previously been mentioned under Dangers.

Comparision withprevious surveys, continued.

b) A lone 9 fathom sounding in lat. 33° 27' 220m, long. 118° 28' 925m, could not be checked, the depths varying uniformly from 48 to 66 fathoms in this vicinity. The writer was informed that fisherman have been unable to find this shoal. It is recommended the nine fathom sounding be deleted. *9 fathom sounding found to be erroneous. See par. 6c (1) of this review*

c) It is recommended a 2 fathom sounding charted off the point forming the west side of Fisherman Cove be removed from the chart, as it falls among 10's and 15's. *2 fathom sounding found to be erroneous See par. 6c (14) of this review*

d) The 1 3/4 fathom sounding east of the pier in Isthmus Cove is undoubtedly in error, as the present sheet is particularily well developed in this area, and shows depths of 3 to 3 5/6 fathoms. *See par. 6c (16) of this review*

e) The two 1 fathom soundings, appearing on chart No. 5128, off the point to the north of Cherry Cove caused a great deal of additional work, but the proving or disproving of them was considered of extreme importance. On sheet 1210 they are shown as 7 foot shoals, the outer one being marked with kelp; Davidson, in his Coast Pilot, calls them the Seven Foor R ocks. The area was thoroly sounded with an outboard motor driven whaleboat and no evidence of them could be found. A wire drag was constructed from materials at hand and the area repeatedly dragged with no results. To avoid congestion, the no-bottom soundings taken from the whaleboat were not plotted, and the wire drag positions were plotted on an overlay. The inshore lead line and probably a portion of the ground wire grounded on position 14ee and again on 15ee. In each case the sheet shows less water than the depth to which the drag was set. For description of drag and methods used, see page 33 of volume 8. It is recommended these 1 fathom soundings be removed from the charts. *Both soundings found to be erroneous See par. 6c (11) of this review*

f) The 1½ fathom sounding in lat. 33° 27' 1170, long. 118° ~~29'~~ 30' 1460, falls among 11's and 14's, and is undoubtedly in error. *1½ fathom sounding found to be incorrectly plotted. See par 6c (13) of this review*

g) Off the entrance of Catalina Harbor four soundings from sheet 1210 were investigated, all of which were shown to be in error, and it is recommended they be removed from the charts:

1. 12 fathoms, in lat. 33° 25.4', long. 118° 30.4'; plots upon 27 and 28 fathom soundings.
12 fathom sounding plotted incorrectly. See par 6c (17) of this review

2. 26 fathoms, in lat. 33° 25.2; long. 118° 30.4'; plots among 35's and 36's.

3. 36 fathoms (not charted), in lat. 33° 24.9, long. 118° 30.3', plots among 43's and 44's.

Considered disproved par 6c (18) of this review

4. 29 fathoms, in lat. 33° 24.6, long. 118 29.9'; plots among 38's and 40's.

PLOTTING: The sheet was plotted by a civilian draftsman under the occasional supervision of the chief of party.

In order to relieve congestion in areas thick with soundings, kelp, bottom specimens and depth curves were omitted.

The smooth sheet was constructed soon after the topography was accomplished and before the hydrography was started, and was not laid out to include △RED PEAK 2. To avoid distortion, the "dog ear" was not attached to the sheet until all position except those involving that station were plotted.

The following positions, recorded in vol. 1 of sheet SC23 (H-5555) were originally plotted on the latter boat sheet, but are to be included on sheet SC12: 1a to 3a; 36a to 80a1 1b to 8b; 34b to 43b and 1d to 4d. Plotted and inked.

GEOGRAPHIC NAMES: Local authorities were consulted as to the names by which the geopgraphic features of the portion of the Island covered by this sheet are known. Authorities consulted were, 1) George Davidson, U. S. Coast and Geodetic Survey, author of the Coast Pilot of California, Oregon and Washington; 2) Captain Morris of the Wilmington Transportation Company, a man who has spent years in the vicinity of the Island, fishing, transporting tourists around the Island and as master of large passenger vessels plying between the Mainland and the Island; 3) Captain John Wegman, harbor master at Avalon; 4) Mr. George Farnsworth, sport fisherman and an Island resident for more than 25 years; Judge Wendell, and Island historian of sorts.

EMPIRE LANDING, a well established local name.

BLUE CAVERN POINT, a well established local name.

FISHERMAN, ISTHMUS, FOUTH OF JULY and CHERRY COVES are all well established local names.

LION HEAD is a local name for the headland north of Cherry Cove. It is not in general use, although the headland had no other name.

EAGLE BANK is apparently preferred to Western Sunken Reef, as Davidson calls that rocky patch in his Coast Pilot.

HOWLAND LANDING is a name in more general use than HOWLAND COVE, as is shown on the 1873 sheet.

CATALINA HEAD, a name in limited use, but one recommended by the chief of party for this point.

CATALINA HARBOR, LITTLE HARBOR and PIN ROCK are all well established local names.

MILLS LANDING is the local name for the open bight, but one, south of Little Harbor. It is never known by its original name of Charlie Miller Landing.

Geographic Names, continued.

SHIP ROCK is the name by which Bird Rock is known by Island residents, fisherman amd yachtsmen. As the size and shape of the rock in a measure justifies the name, and as it is universally known as SHIP ROCK, it is recommended the name be changed.

BIRD ROCK is the name by which White Rock is known, and for reasons mentioned above it is recommended the rock be called that, rather than its original name.

both names authorized.

Respectfully submitted:

Robert W. Knox

Robert W. Knox,
H. & G. Eng'r,
Chief of Party.

STATISTICS

HYDROGRAPHIC SHEET NO. SC12

Date 1934	Vol	Day	St Mi Sdg	No Pos	No Sdgs	Boat
Jan 23	1*	a	4.1	47	90	Romance
24		b	1.8	17	31	
26		d	0.6	4	7	
Feb 15	1	e	7.7	65	111	
Mar 7		f	11.1	116	226	
8		g	15.3	161	314	
30		h	3.0	28	47	
Apr 24	2	j	9.3	131	234	
May 3		k	-	2	-	
15		l	15.5	174	323	
16	2&3	m	15.6	197	413	
23	3	n	8.8	88	167	
28		p	9.4	133	243	
29	3&4	q	14.5	189	332	
30	4	r	12.3	155	325	
Jun 5		s	1.5	57	237	Whaleboat
6	4&5	t	11.1	177	830	
7	5	u	9.2	150	462	
11		v	6.9	116	223	Romance
13	6	w	15.9	169	347	
14		x	16.3	178	332	
19		y	5.7	60	136	
20	7	z	22.2	184	558	
21		aa	18.0	172	417	
25		bb	2.0	41	98	
26	8	cc	4.2	70	362	Whaleboat
27		dd	2.1	43	142	
Jul 13		ee	-	16	-	
16		ff	0.5	9	12	
17		gg	4.7	99	168	Romance
21		hh	0.3	11	16	
			249.6	3059	7203	

* recorded in Vol 1, sheet SC23

APPROVAL OF CHIEF OF PARTY

Hydrographic sheet No. SC12 and accompanying records have been inspected and approved by me. The field work was done under my direct supervision; the office work under my occasional supervision. No additional work is considered necessary.

Robert W. Knox,
Chief of Party.

Form 567
Rev. Jan. 1933

DIVISION OF CHARTS, FILE NO. _____

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY

H-5556

LANDMARKS FOR CHARTS

Long Beach, California

November 13, 1934, 193

DIRECTOR, U.S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted:

Robert W. Knox *Chief of Party.*

DESCRIPTION	POSITION						DATUM	METHOD OF DETERMINATION	CHARTS AFFECTED
	LATITUDE			LONGITUDE					
	°	'	D.M. METERS	°	'	D.P. METERS			
Tanks	33	26	922	118	28	376			
	33	26	915	118	28	351	USStd	topo	5128
Transmission line	see topographic sheet "P"								5128
Houses	33	23	175	118	28	531			
	33	23	207	118	28	557	USStd	topo	
Tank*	33	27	991	118	31	383	USStd	topo	5128

A list of objects carefully selected because of their value as landmarks as determined from seaward, together with individual descriptions, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report.

The selection, determination, and description of these points are an important factor in the value of the chart. Landmarks selected at appropriate intervals can be clearly charted. However, when none is outstanding, a group of two or three objects may by their interrelationship provide positive indentification. A group so selected should be indicated.

The description of each object should be short, but such as will clearly identify it; for example, a standpipe, elevated tank, gas tank, church spire, tall stack, red chimney, radio mast, etc. Assign numerals to landmarks to indicate: (1) Offshore, (2) inshore, (3) harbor, 1, 2, 3 would be a mark useful on all charts. Generally, flagstaffs and like objects are not sufficiently permanent to chart.

U.S. GOVERNMENT PRINTING OFFICE: 1934 25379

LAC

Dec. 14, 1934

Division of Hydrography and Topography;

✓ Division of Charts:

E. P. Ellis

Tide Reducers are approved in
8 volumes of sounding records for

HYDROGRAPHIC SHEET 5556

Locality Isthmus Cove and Catalina Harbor

Chief of Party: Robert W. Knox in 1934.
Plane of reference is mean lower low water reading.
2.5 ft. on tide staff at Avalon.
10.7 ft. below B.M. 1.
2.0 ft. on tide staff at Catalina Harbor.
5.9 ft. below B. M. 1.

Height of mean higher high water above plane of reference is 5.3 feet at Avalon and 5.2 feet at Catalina Harbor.

Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents.

E

SECTION OF FIELD RECORDS

Report on H. 5556.
Surveyed - Jan. 23 - July 21, 1934.
Chief of Party - Robert W. Knox.
Surveyed by - R. W. K.
Protracted by - C. L. Rasmussen.
Soundings plotted by - R. W. K.
Verified and inked by - P. Scherr.

1. The records conform to the requirements of the General Instructions, with the following exceptions:

a. Changes in course are not recorded.
b. Bottom characteristics not always at top of each page.

2. The usual depth curves are completely drawn.

3. The field plotting was completed to the extent prescribed in the Hydrographic Manual with the following exceptions:

a. The red buoys and mooring buoys shown in the records and on the topographic sheet had not been plotted.
b. All of the rocks noted in the records had not been plotted.
c. The rock awash south of Signal "ASP" (lat. 33°25'.7; long. 118°31'.3) had not been plotted as transferred from the topographic sheet. A four and five-sixths fathom sounding on line 142 - 143 W day was removed from the position of this rock.
d. The entire low water line had not been inked.
e. All Kelp noted in the records had not been plotted.
f. All soundings had not been plotted. Some were omitted in congested areas.

4. The office draftsman did over no part of the drafting done by the field party with the following exceptions:

a. Minus soundings on lines close to shore had been inked as sunken rocks by the field party. These were changed to rocks awash with descriptive notes where necessary.
b. The sunken rock symbol on position 147 "T" day (lat. ~~33°25'.8~~ 33°27'.82; long. 118°31'.~~3~~ 25) was changed to a rock awash symbol.
c. Positions and soundings in error were corrected.
d. The rock awash symbol with note "rk awash at extreme low tides" was used on position 28 U day taking the place of a 3 foot sounding (Section 8 - Rules for verifying) at latitude 33°27'.6; longitude 118°30'.5.
Plot 1 RK - Shoal is marked by buoy.

5. The junctions with adjoining sheets H. 5555 (1934), H. 5557 (1934), are satisfactory. The sheets are in good agreement. ~~with only one discrepancy. A three and one sixth fathoms from H. 5555 plots directly north of a nine and three quarter fathoms sounding which difference may be~~ probably due to ~~the difference in scale between the two sheets. (N.W. of signal "PAB".)~~

6. Remarks.

a. There is generally good agreement at the crossings of lines. A bad crossing exists at latitude 33°27'.2; long. 118°29'.3 between lines 56 - 57 "1" day (3 2/6 fathoms) and position 48g (9½ fathoms) north of station "White Rock". The 9½ fathoms sounding on the position was inked pending the review. 3½ fathom plotted. See par. 6(19) of Review

b. The positions of the rocks S½E of Signal "Bird Rock" as located by the records (K day) and boat sheet do not agree with those as transferred from the topographic sheet. The rocks as located by the records and boat sheet were also plotted and inked by the verifier with the corresponding descriptive notes. The field party is not consistent in its description of these rocks -- in the records, that rock baring 5' MLLW which is 77 meters south of Bird Rock is described as the outermost rock; whereas the descriptive report in paragraph "d" of Dangers evidently accepts the Topographic authority for the outermost rock. See par 1 b of Review

c. Those rocks shown in red and in pencil on the topographic sheet which were transferred to that sheet from Topo. 1603 (1877) were not plotted on the smooth sheet.

d. Contrary to paragraph "c" of Discrepancies, position 31, R day does not plot a 44 fathoms sounding but is 165 meters distant from the sounding in reference, which sounding falls on line 174 - 175 "Q" day. Position 175, Q day was replotted giving better agreement in time, straightening the curve to some extent.

e. In paragraph "H", Discrepancies, of the report, the writing of 68 and 69, U day should evidently be changed to make it "V" day. The 5½ fathoms sounding was not plotted or inked as the report advises.

f. Hydrographic signals, "BON", "THRE", "PRO" (Relocated.) on the smooth sheet, appear on the topographic sheet as topographic signals.

g. The kelp on the topographic sheet was transferred by the verifier to the smooth sheet where ~~it was~~ otherwise not indicated by the records or boat sheet, but the position of the kelp from the topographic sheet was changed to keep it shoreward of the hydrography, as the hydrographic party in every case mentioned ran outside of the kelp.

~~h. The position of the rock awash located by the field party mentioned in the report under "Dangers", paragraph "A", on Pages 61 and 66, Vol. 4, of the records, does not agree with the position of the rock located by the topographic party which is probably the same rock. Both are shown on the sheet.~~

j. A signal "FLAT" is used in the records which corresponds to Signal "SEX" on the smooth sheet. The name "FLAT" is crossed out on the boat sheet.

Respectfully submitted,

P. H. Scherr,
P.H.Scherr.
May 7, 1935.

Verification of Wire Drag.

Description of drag and methods appears on page 33, volume 6 of the sounding records. Overlay attached to page 33 was checked by verifier. Was not asked as the main object was to see that the area in question was covered. Attention is called to the fact that both boats stopped at position 2. Drag strip was drawn continuous between positions 2 and 3 by the field party. Distance between boat positions does not check drag length indicating possible excessive lift as the drag was set at 60 ft. Effective depth would vary between 56 and 58 ft. with no allowance for lift. Although not mentioned in description two uprights and no towlines were apparently used. Uprights must have been made fast to the boats

Verifier has not checked the positions back to the original sheets of the two one fathom spots shown on the overlay.

Jam McCormick.

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. 5556

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	3059
Number of positions checked	75
Number of positions revised	5
Number of soundings recorded	7203
Number of soundings revised	32
Number of signals erroneously plotted or transferred	✓

Date: May 7, 1935

Verification by P. Scherr Time: 93 hr ~~13 days, 2 hrs.~~

Review by [signature] Time: 78 hr.

To: Mr. Bacon
From C.F.M.

Date. Dec. 15, 1934

GEOGRAPHIC NAMES
CALIFORNIA

Survey No. H5556
T4870a
Chart No. 5102 & 5128

Names underlined in red approved Dec 17, 1934 Harlow Bacon

Diagram No. 5102-3

*, Approved by the Division of Geographic Names, Department of Interior.

¢, Not Approved by the Division of Geographic Names, Department of Interior.

R, Referred to the Division of Geographic Names, Department of Interior. R.

See authorities on page 5, Desc Report.

Status	Name on Survey	Name on Charts	New Names in local use	Names assigned by Field	Location
✓	Mills Landing	✓ Same			
✓	Cottonwood Canyon accept as a local name	✓ ------			
✓	Little Harbor	✓ Same			
✓	Pin Rock	✓ Chart 5128			
✓	Catalina Harbor	✓ Same 5128+5102			
✓	Ballast Pt.	Same 5128			
✓	Catalina Head	✓ -------	Same	Same	
✓	Empire Landing ✓	------- ✓	Same	Same	
✓	Blue Cavern Pt. ✓	✓ -------	"	"	
✓	Fisherman Cove ✓ Local usage	✓ Fisherman Harbor	"	"	
✓	Isthmus Cove ✓	Same			
✓	Fourth of July Cove ✓	✓ -------	Same	Same	
✓	Cherry Cove ✓	✓ -------	"	"	
✓	Lion Head ✓	✓ -------	"	"	
In water	Eagle Bank ✓ ✓	✓ -------	"	"	✓
✓	Howland Landing Local usage	✓ Howland Harbor Rowan's Map of Los Angeles Co	"	"	
	--------	✓ Bird Rock R	Ship Rock	Recommended Ship Rock	33°27.8' ✓ 118°29.5'
	--------	✓ Bird Island Rowans Map of Los Angeles Co, 1900 White Rock R	Bird Rock	Recommended Bird Rock	33°27.1' ✓ 118°29.2'
	Harbor Reefs ✓				

(M 100)

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5556 (1934) - FIELD NO. SC12

Isthmus Cove and Catalina Harbor, Santa Catalina Island, California
Surveyed in 1934
Instructions dated September 13, 1934 (R. W. Knox)

Hand Lead and Machine Soundings. 3 Point Fixes on Shore Signals.

Chief of Party - Robert W. Knox.
Surveyed by - Robert W. Knox.
Protracted by - C. L. Rasmusson.
Soundings penciled by - Robert W. Knox.
Verified and Inked by - Paul H. Scherr.

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual except as follows:

a. Tide reducers were entered in feet in some cases and tenths of fathoms in others, but were not always properly marked at the top of the record page.

b. Notes in the "Remarks" column in reference to the location of rocks awash just south of Ship Rock were ambiguous. The topographic location of these rocks is accepted as correct.

The Descriptive Report is satisfactory.

2. Compliance with Instructions for the Project.

This survey satisfies the requirements of the instructions and is complete.

3. Sounding Line Crossings.

Such cross lines as result from the work, as well as adjacent parallel lines are in satisfactory agreement.

4. Depth Curves.

The usual depth curves can be satisfactorily drawn.

5. Junctions with Contemporary Surveys.

The junctions with H-5555 (1934) and H-5658 (1934) are satisfactory.

The junction in Catalina Harbor with H-5557 (1934) is satisfactory.

6. Comparison with Prior Surveys.

a. H-289 (1851).

This is a small scale reconnaissance survey of the west coast, which consists mostly of topography and a single line of soundings run along the coast and around offlying islands. There are only a few soundings which fall within the limits of the present survey, and these are in agreement.

b. H-291 (1851) and H-308 (1852).

These are reconnaissance surveys of Catalina Harbor and Isthmus Cove, and consist of widely spaced zig-zag lines. Because of the character and age of these surveys, a detailed comparison is unwarranted.

c. H-1210 (1873).

This survey covers the area adjacent to Isthmus Cove and Catalina Harbor with a moderate development. The offshore soundings agree very well but there are numerous single, undeveloped, shoal soundings which were not verified by the present survey. Practically all of these soundings were found to have been erroneously plotted when investigated in the records. Many notes in the records were misinterpreted and errors in both the protracting of positions and plotting of soundings were extremely frequent. No reliance can be placed in this survey without replotting the entire sheet, and this is not necessary since the present survey covers the area adequately and is more detailed. A general note that the soundings should not be used for charting has, therefore, been placed on H-1210 (1873).

The following dispositions have been made of the most outstanding discrepancies:

(1) The lone 9 fathom sounding (charted) at lat. 33°27.12', long. 118°28.59' is plotted 360 meters too far offshore on H-1210 (1873). It is recorded in the old records as being two boat lengths from shore (pos. 41b to 42b) in which position it would agree with the present depths. The 9 fathom sounding should be deleted from the chart.

(2) The 22-1/4 fathom sounding (uncharted) at lat. 33°27.01', long. 118°28.6' is recorded as being two boat lengths from the shore. This sounding as well as the 9-1/4, mentioned in the preceeding paragraph, has been plotted on equal time

intervals between two positions, one of which is plotted erroneously. Although its position cannot be determined accurately, it is certain that the 22-1/4 fathom sounding is plotted at least 140 meters too far offshore. In view of the good development in this vicinity on the present survey, the 22-1/4 fathom sounding should be disregarded in charting.

(3) The soundings between positions 6c (red) and 7c, northwest of Ship Rock (formerly called Bird Rock), are displaced due to an error in plotting position 6c. When plotted correctly they are in fair agreement with the present survey. The 1-1/4, 5 and 26 fathom charted soundings should be disregarded in future charting.

(4) The 7½ fathom sounding (charted) at lat. 33°27.79', long. 118°29.52' falls in depths of 20 fathoms on the present survey and is about 40 meters too far west of Ship Rock. The old records have this note opposite the 7-1/2 fathom sounding: "one boat length from west end of Bird Rock"; making it quite evident that the sounding was taken close inshore where it is in good agreement with similar depths on the present survey. The 7½ should not be retained on the charts.

(5) The 17 fathom (charted) sounding at lat. 33°27.78', long. 118°29.37' falls in depths of 30 fathoms on the present survey. This sounding is plotted half way between positions 34 and 35c (blue) instead of being plotted on position 35c, as clearly shown by the old records. It should be disregarded in future charting.

(6) The 14 foot sounding (charted 2-1/4 fathoms) falls in depths of 20 fathoms on the present survey. It is plotted on position 35c, but according to the records it is close to Ship Rock. The 14 foot sounding should not be used for charting.

(7) The 6 foot sounding (charted 1 fathom) in lat. 33°26.99', long. 118°29.16' falls in a well developed area of 20 to 24 fathoms on the present survey. It was found that good agreement in depth with the present survey could be obtained by plotting position 19b (blue) using the right angle time and line. The sounding of 3/4 of a fathom (charted) at lat. 33°27.03', long. 118°29.23' also depends upon pos. 19b (blue) for control and probably belongs close inshore. The charted rock awash, just north of the 3/4 originates from a zero sounding which was plotted considerably outside of the position which it apparently should be on, very close inshore. (This position could not be found in the records).

The soundings of 1 fathom and 3/4 fathoms, as well as the rock awash mentioned in this paragraph, are believed to be in erroneous positions and should be discontinued on the chart.

(8) The 6½ foot sounding (charted 1 fathom) at lat. 33°27.15', long. 118°29.25' falls in depths of 11 fathoms on the present survey. The note in the old record opposite this sounding states "end of line 30 feet from west end of island." The sounding is erroneously plotted 80 meters northwest of the island. The 10 fathom sounding (charted) on the same line is about 50 meters too far from the island. These soundings are in satisfactory agreement with the present survey when plotted correctly. They should not be used for charting purposes.

(9) The 4-1/4, 6, 5-3/4, and 2-3/4 fathom soundings (all charted) on line 11 to 13b (blue), inclusive, in approximate lat. 33°26.85', long. 118°29.5', fall in depths of 15 to 20 fathoms on the present survey. Positions 11b was found to be erroneously plotted, and position 12b is probably also in error, as a change of 10 degrees in the right angle places the entire line of soundings in perfect agreement with the depths on the present survey. The soundings on H-1210 (1873) should be disregarded in future charting.

(10) The 20 fathom sounding (charted) in lat. 33°27.24', long. 118°29.87' falls in a flat area in depths of 30 to 31 fathoms on the present survey. The particular line on which this sounding appears could not be found in the old records; however, the present soundings are considered to furnish sufficient evidence for disregarding the 20 in charting.

(11) Two 7 foot soundings (charted as 1 fathom) to the north of Cherry Cove (approximate lat. 33°27.3', long. 118°30.0') were searched for with the hand lead and also with an improvised wire drag. An examination of the old records reveals that both of these soundings are at the beginning of lines running seaward and that the positions were determined by "boat lengths" from the shore but were actually plotted very much too far off shore. It was also found that when the soundings on the lines involved were plotted backward in time from the next position (thru point fix) that the seven foot soundings fell close inshore, and that other soundings were in good agreement with the present survey. The recommendation by the field party that these soundings be removed from the chart is concurred in.

(12) The 7 foot sounding (charted 1 fathom) in lat. 33°27.32', long. 118°30.35' falls in 9½ fathoms on the present survey. An examination of the records shows that it is the beginning of a line running seaward and that it is determined by estimated "boat lengths" from the shore. Because this sounding falls in a well developed area on the present survey, and its location is not accurately determined on the old survey, it should be removed from the chart.

(13) The 9 foot sounding (charted 1½ fathoms) in lat. 33°27.62', long. 118°30.93' falls in depths of 11 fathoms on the present survey. This sounding is at the beginning of a line (position 16d (red)) and is recorded as "two boat lengths" from the shore. The 9 foot as well as the 5-1/4 fathoms (charted) on the same line 150 meters eastward, are plotted too far offshore. They are out of position and should not be used in charting.

(14) The 2 fathom sounding (charted) in lat. 33°26.74', long. 118°29.22' is erroneously plotted on H-1210 (1873). When plotted correctly it is in satisfactory agreement with the present survey. It should be removed from the chart as recommended by the field party. (See p. 4, par. c, Descriptive Report).

(15) The 4 fathom sounding (charted) in lat. 33°26.86', long. 118°29.47' and the 13 fathom sounding (charted) in lat. 33°27.6', long. 118°30.45' fall in 10 fathoms deeper water on the present survey. These soundings could not be identified in the records. Because of the close development on the present survey in these places, together with the general unreliability of the plotting on the old survey, the 4 fathom and the 13 fathom soundings are considered disproved, and they should be disregarded in future charting.

(16) The 1-3/4 fathom sounding (charted) lat. 33°26.57', long. 118°29.77' falls in depths of 3 to 3-5/6 fathoms in a close development on the present survey. Although not found in the old records, this sounding is sufficiently disproved by the new development and should be deleted on the chart as recommended by the field party. (See p. 4, par. d, Descriptive Report).

(17) The 12 fathom sounding (charted) in lat. 33°25.4', long. 118°30.37' was found to be plotted erroneously. When it is plotted correctly it is in agreement with the present survey. The 12 fathom sounding should be expunged from the chart.

(18) Other shoal soundings (charted) which are about 10 fathoms shoaler than the depths shown on the present survey are as follows:

The		26 fathom,	lat.	33°25.24', long.	118°30.42'
"	(uncharted)	36 "	"	33°24.9', "	118°30.3'
"		29 "	"	33°24.59', "	118°29.85'

Since the above soundings fall in well developed areas on the present survey where the bottom is uniform, these soundings should be replaced on the chart by those of the present survey as recommended by the Chief of Party. (See par. g, page 4, Descriptive Report).

(19) The 3 fathom sounding (charted) 130 meters northwest of Bird Rock, lat. 33°27.15', long. 118°29.3', is corroborated by a 3-2/6 fathom sounding in the same spot on the new survey. The 3 fathom sounding has been carried forward to the present survey.

(20) The soundings shown on the shoal (Eagle Bank) in approximate lat. 33°27.6', long. 118°30.5' are not in close agreement with the present depths. The fixes controlling these soundings used signal "Middle" for the center object. Signal Middle is shown on the tip of a promontory which same promontory was located on the present topographic survey, T-4870a (1934), about 45 meters west of the old position. If signal Middle was moved to fit the present shoreline, the soundings on this shoaling would be in fair agreement with the present ones. H-1210 (1873) shows some shoaler soundings than the present surveyon this shoal, but in view of the uncertainty as to their positions it was not considered advisable to bring them forward. A shoaler depth than shown on H-1210 (1873) on this bank has, however, been carried forward from H-1413 (1877-78). (See par. 6d(2) of this review). The charted soundings from H-1210 (1873) on this shoal should be superseded by those of the present survey.

(21) The sunken rock (uncharted) in lat. 33°27.62', long. 118° 30.51', originating with T-1299a (1853-73) and T-1603 (1876-77), falls about 50 meters south of the $\frac{1}{2}$ fathom sounding on the present survey. The rock was evidently located by the topographic party taking cuts on a breaker, since T-1299a has a note "sunken rock 4 feet mean low water." Because the $\frac{1}{2}$ fathom sounding on the present survey was obtained by "feeling" for the shoalest depth, together with the fact that the shoal as a whole was well developed, the sunken rock shown on the old topographic surveys is considered to be the same 3 foot rock located by the present hydrography. The present location is accepted and the sunken rock symbol from T-1299a (1853-73) and T-1603 (1876-7) should be disregarded in future charting.

(22) The 5 fathom sounding (charted) at lat. 33°25.65', long. 118°30.41' is actually 5 feet in the records, (pos. 1c, red), but it was found that the position was erroneously plotted. When plotted correctly, it falls within the 1 fathom curve on the present survey. This sounding should be disregarded in future charting.

(23) The 5-3/4 fathom sounding (charted) at lat. 33°25.54', long. 118°30.44' falls outside the 10 fathom curve on the present survey. The sounding is on the line between pos. 1c and pos. 2c (red), and pos. 1c was found to be incorrectly plotted, and pos. 2c was found to be a revolver. This sounding should be discontinued on the chart.

(24) The 10-1/4 fathom sounding (charted 10 fathoms) at lat. 33°25.6', long. 118°30.59' falls in depths of from 12 to 14 fathoms on the present survey. This sounding is on the line between pos. 23a and pos. 24a (red), but investigation showed that all the soundings between these positions had been erroneously plotted between pos. 17a and pos. 24a, instead of between pos. 23a and pos. 24a. In their correct positions the soundings are in agreement with the present survey. The 10-1/4 should be discontinued in future charting.

(25) The 18 fathom sounding (charted) in lat. 33°27.59', long. 118°30.38' falls in depths of 30 fathoms on the present survey. This sounding was found to be incorrectly plotted. When plotted correctly it is in perfect agreement with the depths of the present survey. The 18 fathom sounding should be disregarded in future charting.

d. H-1413 (1877-78).

The depths beyond 30 fathoms are in agreement with the present survey. Differences in depth and shoreline are noted as follows:

(1) The 9 foot and 10 foot soundings in lat. 33°27.62', long. 118°30.95' and lat. 33°27.67', long. 118°30.57', respectively, originate with H-1210 (1873) and have been disposed of in par. 6c(14) and par. 6c(20) of this review.

(2) The soundings on the shoaling (Eagle Bank) in approximate lat. 33°27.6', long. 118°30.6', do not agree closely with the present depths on the western end of this shoal. The shoreline on H-1413 (1877-8) is shown on T-1603 (1876-7) but apparently actually originates with T-1299a (1853-73) and is considerably different from the present shoreline,

from H-4870a (1934), in this area. In all probability the signals controlling the soundings on this shoal on H-1413 (1877-8) are also slightly in error. In view of the close development of the present survey, the least sounding shown, 2-5/6 fathoms, is probably the correct location of shoalest point on the western end of this shoal. Since the 2-5/6 fathom sounding was not the result of drift soundings, it is felt that it may not be the least depth and the shoalest of the old depths (1-1/6 fathoms) has been carried forward in close proximity to the present 2-5/6.

(3) The rock awash shown in lat. 33°24.00', long. 118°29.26' is also shown on H-1414b (1878) from a note in the sounding records of that sheet. This rock was found to have been incorrectly plotted and should not be used in charting. (See review of H-5555 (1934), par. 6c).

(4) The rocks awash in lat. 33°22.97', long. 118°28.75' and lat. 33°22.57', long. 118°29.25' originate with H-1414b (1878) and are considered in the comparison with that survey, in par. 6e(1) and par. 6e(2).

(5) Two rocks awash in lat. 33°25.37', long. 118°30.94' originate with T-1603 (1876-77). They are shown on T-1229a (1853-73) but not in the same location. The present topographic survey, T-4870a (1934), shows one as a bare rock, the other as a rock awash in practically the same position as shown on T-1603 (1876-77). These rocks should be charted as shown on T-4870a (1934).

e. H-1414b (1878).

Approximately three square miles of this survey fall within the limits of the present survey. In general there is fair agreement in depth and shoreline. Important rocks and shoals not corroborated by the present survey have been disposed of as follows:

(1) The rock in lat. 33°22.57', long. 118°29.25', charted as a sunken rock, is incorrectly plotted. An examination of the records (pos. 14f, red) shows that the rock is plotted in the wrong direction on range with Round Rock instead of Castle Rock as recorded. The estimated distance of 250 feet is probably 250 meters. When this rock is plotted using the recorded fixes and range but 250 meters instead of 250 feet, it falls on the outermost rocks in lat. 33° 22.35', long. 118°29.20', as located by the present survey. The rock in lat. 33°22.57', long. 118°29.25', shown on H-1414b (1878) and H-1413 (1877-8) is therefore erroneous and should be removed from the chart.

(2) The rock awash in lat. 33°22.97', long. 118°28.75' is located by estimated boat lengths from the 6-1/4 fathom sounding on the line running inshore from position 23h. The records show that there is no recorded time interval for the soundings ("taken continuously") between position 23h and the shore, and are plotted on the sheet with a uniform time interval. It is probable that the boat decreased speed markedly as it approached the sand beach. A comparison of the depths on this sounding line with the sounding on the present survey indicates that the boat was near the rock awash in lat. 33°23.07', long. 118°28.64', which is also shown on the present survey. The rock awash as well as the soundings on this line should be disregarded in future charting.

f. T-1603 (1877) - Reference Par. 4b, Review of T-4870a (1934).

The sunken rock in lat. 33°23.9', long. 118°29.1', originating from T-1603 (1876-77) was missed 20 to 40 meters by the sounding lines run at a two to five foot tide on the present survey. It is carried forward to H-5556 (1934) and T-4870a (1934) because it is close to a kelp area and is not considered disproved.

7. Comparison with Charts No. 5128, 5102, 5202.

a. Within the area of the present survey the chart is based on surveys discussed in the foregoing paragraphs and contains no additional information that needs consideration in this review except that no authority could be found for the charted 6½ fathom sounding in lat. 33°26.88, long. 118°29.52'. This sounding falls in depths of 15 to 16 fathoms on the present survey, but due to the close development of this area and the uniform slope of the bottom from the nearby shoal (Harbor Reefs), the 6½ fathom sounding is considered erroneous and should be disregarded in future charting.

b. Aids to Navigation.

The buoys in lat. 33°26.82', long. 118°29.34' and lat. 33°27.67', long. 118°30.41' were located in substantially the same positions as charted. The two buoys charted in lat. 23°27.6', long. 118° 29.49' and lat. 23°26.93', long. 118°29.54' were established subsequent to the date of this survey (H-5556, 1934).

8. Field Plotting.

The field plotting was satisfactory with the exception of the failure to completely transfer the topographic shoreline detail from the contemporary topographic surveys to the smooth sheet.

9. Additional Field Work Recommended.

This survey is complete and satisfactory. No additional field work is required.

10. Superseding Old Surveys.

Within the area covered the present survey, with the indicated additions from previous surveys, supersedes the following surveys for charting purposes:

H- 289 (1851) in part.
H- 291 (1851) entirely.
H- 308 (1852) "
H-1210 (1873) in part.
H-1413 (1877-78) in part.
H-1414b (1878) in part.

11. Reviewed by - Leo S. Straw and R. L. Johnston, June 24, 1935.

Inspected by - A. L. Shalowitz.

Examined and approved:

C. K. Green, Chief, Section of Field Records.

L. O. Colbert, Chief, Division of Charts.

Chief, Section of Field Work.

G. Rude, Chief, Division of H. & T.

25 Jan 13, 1936

E.H.D.

applied to Chart 5101 - May, 1936 - R.M.Z